



ENERGY-EFFICIENT AND CLIMATE-FRIENDLY COOLING IN NIGERIA

PROJECT AT-A-GLANCE



Mainstreaming enhanced cooling targets in Nigeria's Nationally Determined Contribution (NDC) and implementing priority interventions

STATUS ACTIVE

STARTING DATE: **January 2022**
 CLOSING DATE: **December 2024**

GEOGRAPHICAL SCOPE

National project: **Nigeria**



Supported by



TOTAL PROJECT COST



USD \$500,000

GOVERNMENT PARTNER

Energy Commission of Nigeria (ECN)

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BRIEF DESCRIPTION


Nigeria is the largest market for cooling products in Africa and one of the fastest growing in the world. Annual sales of mini-split air-conditioners (ACs) in the country are over 0.55 million units, which account for about 20% of the total in Africa and Middle Eastern countries. The market share of inverter ACs is approximately 20% and growing. Most of the ACs are inefficient and use refrigerants with a high global warming potential (GWP). Nigeria's population has been growing at a rate of 2.5% yearly since 2000. This trend, combined with improving lifestyle and urbanization, collectively contributes to a growing demand for ACs and other cooling devices.

The government of Nigeria has partnered with UNEP to implement a programme to accelerate the transition to climate-friendly (low-GWP refrigerant) and energy-efficient ACs in residential, commercial and public buildings, and to link these activities with the revised NDC. The programme aims to increase the ambition of the country's NDC by incorporating cooling related targets to reduce indirect greenhouse gas emissions via reduced electricity consumption and the related GHG emissions from fossil fuel combustion at power plants, and direct greenhouse gas emissions by accelerating the transition to lower GWP refrigerants.


Expected Project Benefits in 2040:*



15 TWh on annual electricity savings
 (avoiding investment costs for 6.8 power plants of 500MW)



\$1.7 billion savings in annual electricity costs



9.8 million tonnes of CO₂ avoided annually
 (equivalent to more than 5.4 million cars)

*The savings potential assumes Minimum Energy Performance Standards (MEPS) are introduced in 2023



PROJECT OUTPUTS

- Technical support to the NDC Review Committee for the inclusion of enhanced targets for room air conditioners in the revised NDC.
- Awareness campaign to promote sustainable cooling to the public and businesses to raise awareness and buy-in.
- Revision of the existing draft room AC minimum energy performance standards (MEPS) and energy labels to enhance efficiency and consider refrigerant GWP limits, with cross-reference to regional efforts already underway.
- Recommend protocols to enhance monitoring, verification and enforcement and provide capacity building for officials to strengthen the regulatory environment and help attain the targets under the revised NDC.
- Technical capacity building for technicians to support proper installation of new, energy-efficient, climate-friendly room air-conditioners.
- Develop a product on key implementation actions for space cooling to strengthen the National Cooling Action Plan.

PROJECT OUTCOME

The overall programme goal is to accelerate the transition to climate-friendly (low-GWP refrigerant) and energy-efficient ACs in residential, commercial and public buildings, thereby contributing to Nigeria's NDC in a cost-effective and sustainable manner. Target outcomes are:

- AC MEPS and labels revised, with plans in place for adequate future monitoring, verification and enforcement.
- Reduction in indirect greenhouse gas emissions via reduced electricity consumption and the related GHG emissions from fossil fuel combustion at power plants.
- Reduction in direct greenhouse gas emissions by accelerating the transition to lower GWP refrigerants (legacy refrigerants destroy the ozone layer and accelerate global climate change).
- Priority actions for space cooling identified for implementation building on the National Cooling Action Plan.
- Enabling the attainment of the 30% energy efficiency target under Nigeria's NDC.



PROJECT TEAM EXPERIENCE

ECN is responsible for the promotion of Sustainable Energy Development in Nigeria through the production of strategic plans and coordination of national policies in all its ramifications.

UNEP is a leading global environmental authority that sets the global environmental agenda, promotes the coherent implementation of the environmental dimension of sustainable development within the United Nations system, and serves as an authoritative advocate for the global environment.

UNEP supports African governments to improve energy efficiency and increase the use of renewables. UNEP's Africa Office aims for sustainable energy to lay the foundation for low carbon development, resource efficient and climate resilient energy systems in Africa.

UNEP-U4E, through their in-house experts and specialized partners, provides developing and emerging economies with tailored technical support to transform their markets by accelerating the adoption of energy-efficient lighting, appliances, and equipment.

